

### Abstract

A novel structure is provided to improve the luminance and operating stability of phosphors used in ac thick film dielectric electroluminescent displays. The novel structure comprises aluminum nitride barrier layers in contact with the phosphor films to prevent phosphor degradation due to reaction with oxygen. The barrier layers can be deposited using vacuum deposition processes that are compatible with the processes used to deposit and anneal the phosphor films. The invention is particularly applicable to phosphors used in electroluminescent displays that employ thick dielectric layers subject to high processing temperatures to form and activate the phosphor films.